



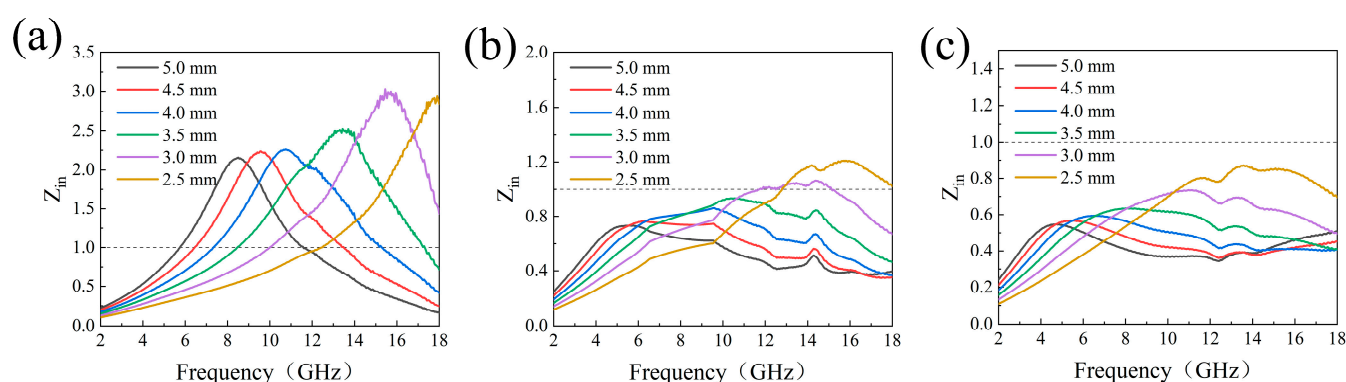
Supporting information

# Ultralight Open-Cell Graphene Aerogels with Multiple, Gradient Microstructures for Efficient Microwave Absorption

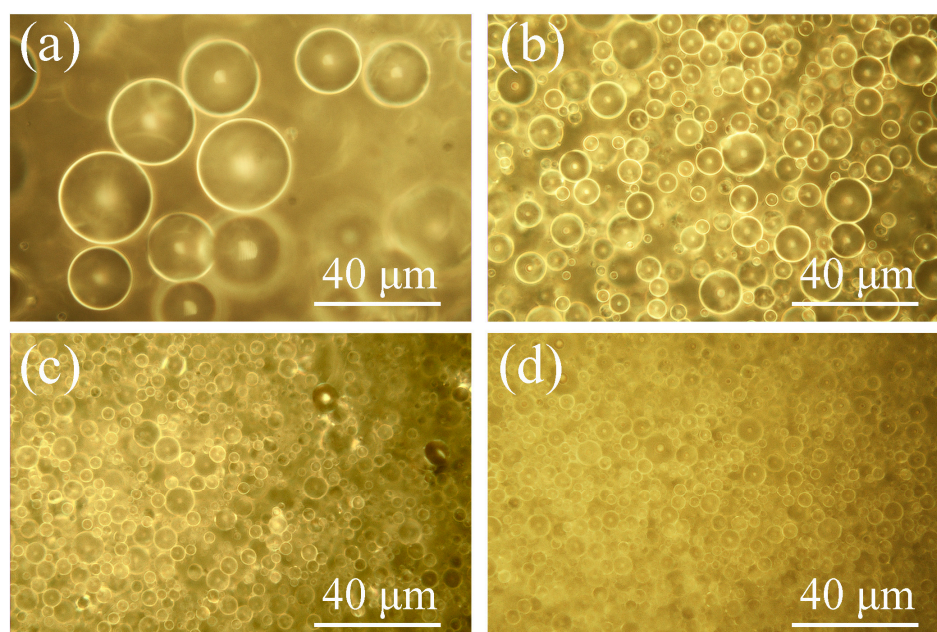
Qilin Mei, Han Xiao, Guomin Ding \*, Huizhi Liu, Chenglong Zhao, Rui Wang and Zhixiong Huang

School of Materials Science and Engineering, Wuhan University of Technology, 122 Luoshi Road, Wuhan 430070, China; meiqilin@whut.edu.cn (Q.M.); pxxiaohan@gmail.com (H.X.); ucchecknorth@gmail.com (H.L.); 246012@whut.edu.cn (C.Z.); 303842@whut.edu.cn (R.W.); zhixiongh@mail.whut.edu.cn (Z.H.)

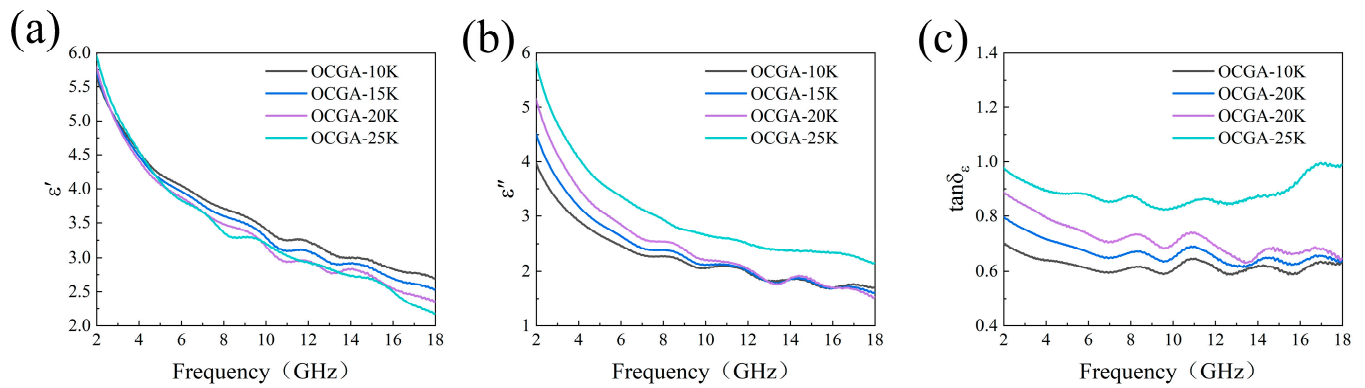
\* Correspondence: sdsdgm@126.com



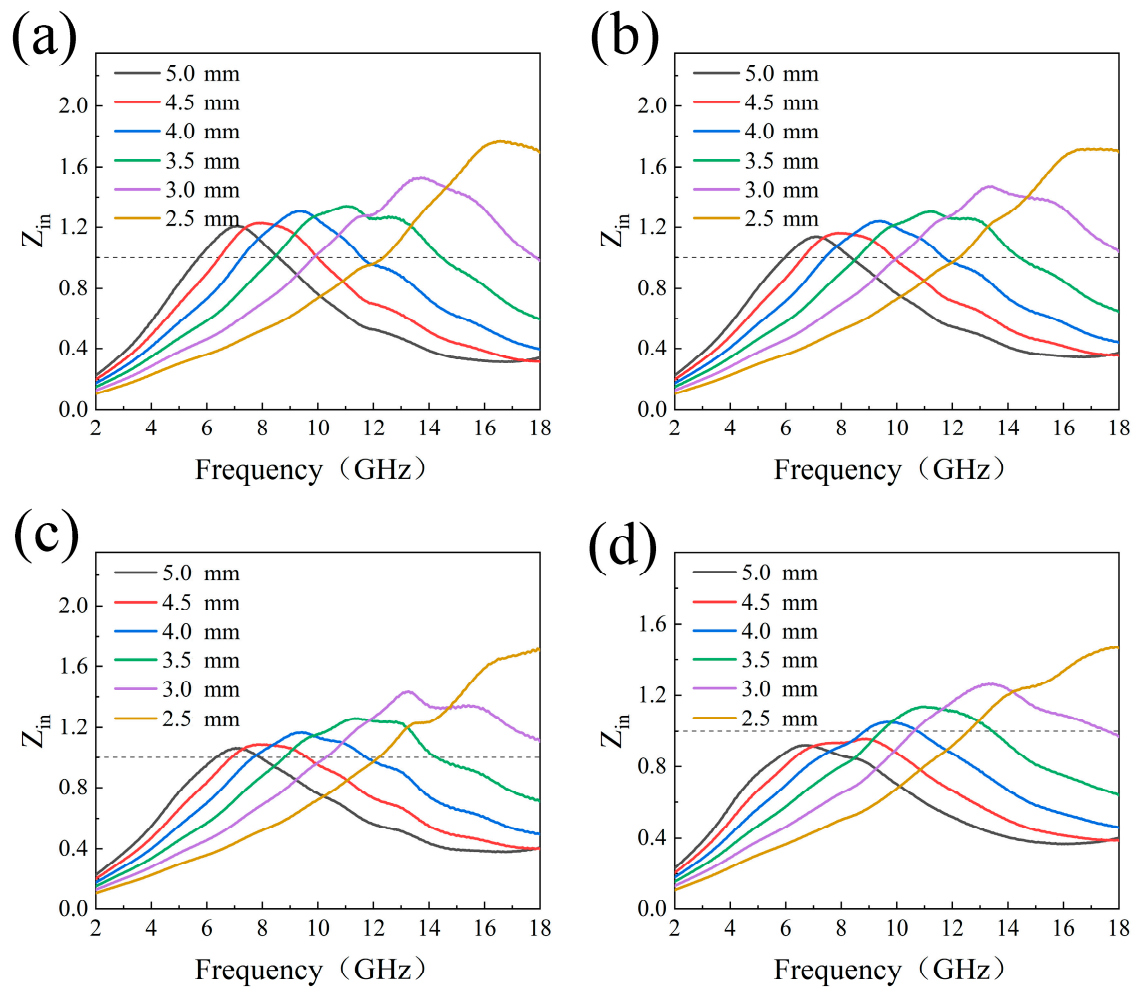
**Figure S1.** Normalized input impedance ( $Z_{in}$ ) of (a) OCGA-L, (b) OCGA-M and (c) OCGA-H.



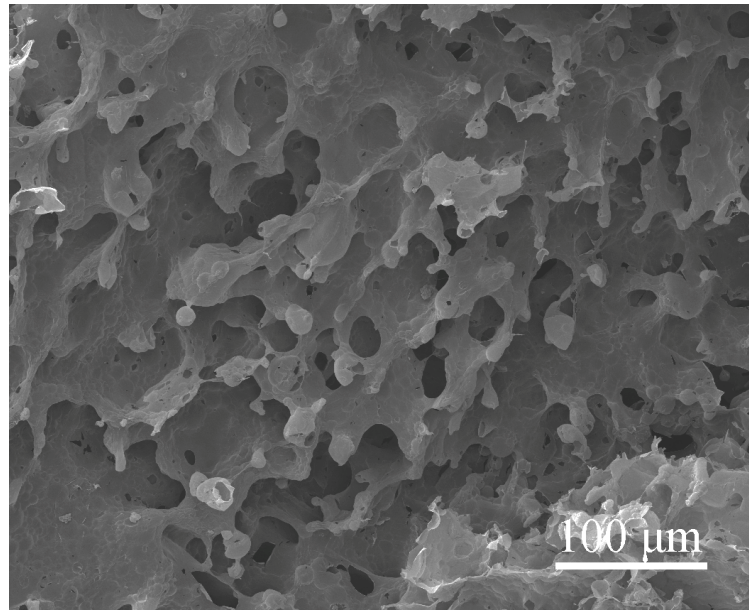
**Figure S2.** Ordinal micrographs of the emulsions prepared by applying rotational speeds of (a) 10k, (b) 15k, (c) 20k, and (d) 25k rpm, which had an average diameter of 30  $\mu\text{m}$ , 10  $\mu\text{m}$ , 6  $\mu\text{m}$  and 4.5  $\mu\text{m}$ , respectively. Apparently, the larger the rotational speed, the smaller the particle size.



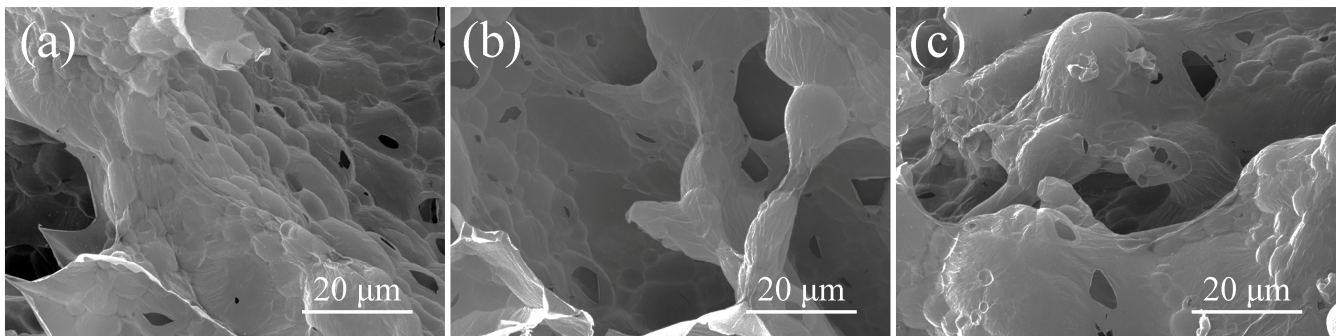
**Figure S3.** (a) Real part of permittivity( $\epsilon'$ ), (b) imaginary part of permittivity( $\epsilon''$ ) and (c) dielectric loss tangent ( $\tan\delta_\epsilon$ ) of OCGA-10K, OCGA-15K, OCGA-20K and OCGA-25K.



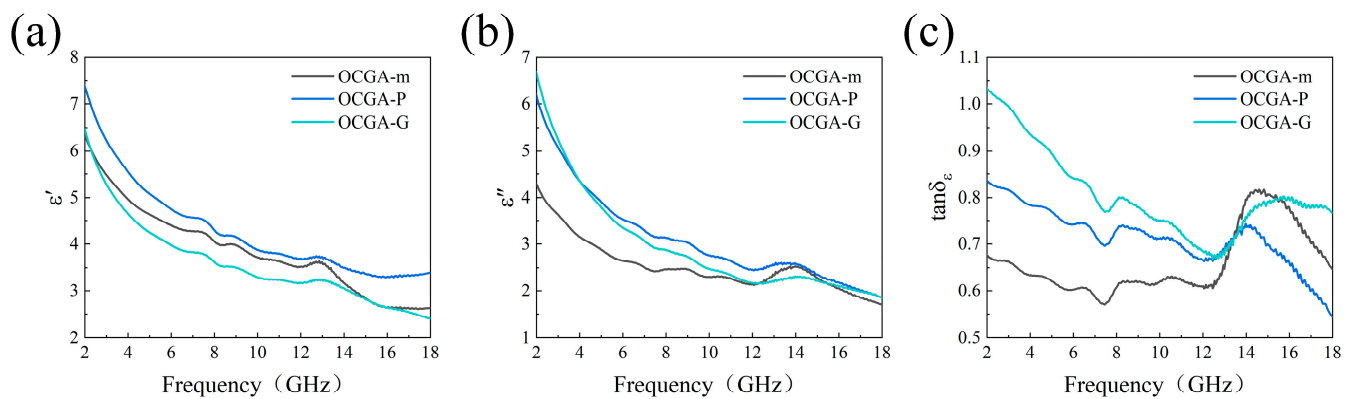
**Figure S4.** Normalized input impedance ( $Z_{in}$ ) of (a) OCGA-10K, (b) OCGA-15K, (c) OCGA-20K and (d) OCGA-25K.



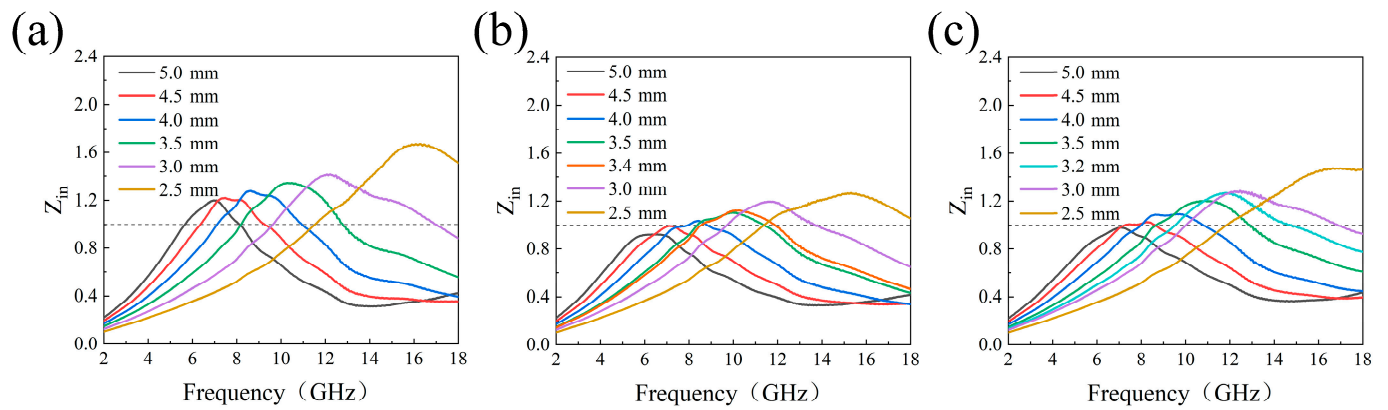
**Figure S5.** SEM images of OCGA-m.



**Figure S6.** SEM images of (a) top region, (b) middle region and (c) bottom region of OCGA-P.



**Figure S7.** (a) Real part of permittivity( $\epsilon'$ ), (b) imaginary part of permittivity( $\epsilon''$ ) and (c) dielectric loss tangent ( $\tan \delta_\epsilon$ ) of OCGA-m, OCGA-P, OCGA-G.



**Figure S8.** Normalized input impedance ( $Z_{in}$ ) of (a) OCGA-10K, (b) OCGA-15K, (c) OCGA-20K and (d) OCGA-25K.